

Abstract

Methods, and compositions for use therein, for directly, rapidly, and unambiguously identifying, in a high throughput setting, unique nucleic acids involved in the process of lipid vacuole formation in cells and/or the cell differentiation process of adipogenesis, using an adenoviral vector library system. The method identifies unique nucleic acids capable of inducing lipid droplet formation in a cell, and determines whether the expression product of such a nucleic acid is secreted. Drug candidate compounds useful in the treatment of disease states such as obesity, type II diabetes and hyperglycemia are identified by the screening of compounds that either increase or decrease the formation of lipid droplets, or mRNA expression in host cells. Pharmaceutical compositions and methods of treatment comprising the polypeptides or polynucleotides identified by the methods of the present invention are disclosed.